

What is claimed is:

1. A method for producing a light transmitting plate, comprising the steps of:

using a molding equipment composed of an injection equipment and a mold for producing a light transmitting plate wherein a cavity of the mold communicates with a cylinder in the injection equipment;

feeding a transparent resin into the cylinder;

melting the transparent resin in the cylinder; and

injecting the molten resin into the cavity of the mold from the cylinder;

wherein a viscosity of the molten resin at the inlet of the mold is about 50 to about 5,000 Pa·sec and an injection rate of the molten resin is about 1 to about 15 cm³/sec.

2. The method for producing a light transmitting plate according to claim 1, wherein the molten resin is continuously filled into the mold cavity with rotation of a screw in the cylinder.

3. The method for producing a light transmitting plate according to claim 1, wherein the molten resin is continuously filled into the mold cavity with progression of a screw with no rotation in the cylinder.

4. The method for producing a light transmitting plate according to claim 1, wherein the transparent resin is a methyl methacrylate resin.

5. The method for producing a light transmitting plate according to claim 1, wherein the injection rate of the molten resin is about 4 to about 11 cm³/sec.

6. The method for producing a light transmitting plate according to claim 1, wherein a diagonal length of the light transmitting plate is not smaller than 14 inches.

7. The method for producing a light transmitting plate according to claim 1, wherein an engraved pattern is provided on at least one surface of the mold cavity and a light transmitting plate obtained has a pattern based on the engraved pattern of the mold formed on at least one side thereof.

8. The method for producing a light transmitting plate according to claim 7, wherein the pattern to be formed is a reflection layer pattern to be provided on the backside of the light transmitting plate.

9. The method for producing a light transmitting plate according to claim 7, wherein the pattern to be formed is a light diffusion layer pattern to be provided on the light emission side of the light transmitting plate.

10. The method for producing a light transmitting plate according to claim 7, wherein one pattern to be formed is a reflection layer pattern to be provided on the back side of the light transmitting plate and another pattern to be formed is a light diffusion layer pattern to be provided on the light emission side of the light transmitting plate.

11. The method for producing a light transmitting plate according to claim 7, wherein the engraved pattern is formed on a cavity plate provided on the surface of the mold.

12. The method for producing a light transmitting plate according to claim 11, wherein the cavity plate is made of a metal with a higher thermal conductivity than that of the metal forming the mold.

13. The method for producing a light transmitting plate according to claim 7, wherein the engraved pattern is formed on a metal plate provided on a cavity plate which has not the engraved pattern, is made of a metal with a higher thermal conductivity than that of the metal forming the mold and is provided on the surface of the mold.

14. The method for producing a light transmitting plate according to claim 12 or 13, wherein the metal with a higher thermal conductivity than that of the metal forming the mold is beryllium copper alloy.

15. The method for producing a light transmitting plate according to claim 1, wherein the transparent resin is injected into the cavity with the temperature of the mold cavity surface being not lower than the glass transition temperature of the transparent resin, and after injecting the temperature of the cavity surface is lowered to not higher than the glass transition temperature of the transparent resin.

16. The method for producing a light transmitting plate

according to claim 1, wherein fluid passageways are provided in the mold wall and near the mold cavity surface and a heating medium and a cooling medium are allowed to flow through the fluid passageways alternately thereby regulating the temperature of the transparent resin filled in the cavity.

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